

ABSTRACT

5 A self-powered microthermionic converter having an internal thermal power
source integrated into the microthermionic converter. These converters can have high
energy-conversion efficiencies over a range of operating temperatures. Microengineering
techniques are used to manufacture the converter. The utilization of
an internal thermal power source increases potential for mobility and incorporation into
10 small devices. High energy efficiency is obtained by utilization of micron-scale
interelectrode gap spacing. Alpha-particle emitting radioisotopes can be used for the
internal thermal power source, such as curium and polonium isotopes.